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The English privative prefixes *near-*, *pseudo-* and *quasi-*: Approximation and ‘disproximation’

Abstract: The English prefixes *near-*, *pseudo-* and *quasi-* are privative, in that whatever essential property their morphological base expresses is not strictly possessed by an entity characterized as *near-/pseudo-/quasi-X*. However, we claim this meaning is not precise enough and hypothesize that *near-* and *quasi-* are approximative in meaning, whereas *pseudo-* is ‘disproximative’, expressing the idea of ‘falling short’ of a standard. Distributional-semantic findings partially support this, as *near-* shares more bases with *quasi-* than it does with *pseudo-*. *Near-* is most productive, presenting a default choice, while *pseudo-* is least productive. We also observe a specific tendency of *near-* to select bases with negative semantic prosody (*near-deadly*, *near-fatal*), of *quasi-* to combine, without any evaluative meaning, with legal-administrative bases (*quasi-diplomatic*, *quasi-governmental*), and of *pseudo-* with terms from the scientific domain. Further qualitative observations about these prefixes are made.

Keywords: approximation, disproximation, distributional semantics, prefix, privativity, productivity, semantic prosody

1. Introduction*

1.1 Privativity and approximation

This paper is concerned with three prefixes with a somewhat similar meaning: *near-*, *pseudo-* and *quasi-*, as in *near-perfect*, *pseudo-scientific* and *quasi-religious*. From a formal-semantic point of view, all three count as ‘privative’ prefixes. A privative morpheme, whether bound or free, has the effect of removing an essential property from an entity. Thus, *un-* in *unhappy* is privative in that it indicates the absence of happiness in whoever is described as *unhappy*. Likewise, the adjective *fake*, applied to for instance *blood*, is said

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to be privative because the stuff that we call *fake blood* misses some essential properties of real blood, such as the ability to transport oxygen through the body.

Privativity, however, is too crude a concept to allow us to grasp the full meaning of operators lumped under this semantic heading, or even to characterize those operators consistently (Kamp 1975: 125; Boleda et al. 2012: 1228; Nayak et al. 2014: 5; Cappelle, Denis & Keller 2018). For example, both *non-* and *near-significant* can be applied to findings that are not significant, and both prefixes are therefore privative. Yet, privativity by itself does not help us here to capture the observation that a science project's *non-significant* results are, on the whole, further removed from any significant results than its *near-significant* ones are. As for non-consistency, consider again the adjective *fake*. While *fake blood* does not at all qualify as blood, a *fake handbag* still refers to a handbag, with full functionality – that it is not actually manufactured by a factory of the brand it carries does not remove any essential ‘handbagginess’ from the entity referred to as being fake. *Fake*, therefore, is not consistently privative across all its uses. As for *near-*, *pseudo-* and *quasi-*, these prefixes convey privativity consistently: for all lexical items that can fill the position of X, *near-/pseudo-/quasi-X* is never, in fact, truly or fully X.

While in our example of *non-* versus *near-* above, only *near-* could be said to be ‘approximative’ (in addition to being privative), all three of the prefixes focused on in this paper can be thus qualified, in a broad sense at least (see the introduction of this special issue for some background on ‘approximation’). For instance, a *near-human*, a *pseudo-human* and a *quasi-human* refer to some entity that is not a human but that, in terms of looks or behaviour, approximates one; this can also be said of a *near-/pseudo-/quasi-human creature*, where the prefix is added to an adjectival base. So, technically, the referent of a noun with any of these prefixes, or of a noun combined with an adjective prefixed by any of them, can be interpreted as having properties in common with referents of nouns without any such prefix, or appearing with the corresponding unprefix modifier. Just like ‘privative’, though, the feature ‘approximative’ is again too imprecise to distinguish these three prefixes’ specific semantic contributions, and we therefore suggest an additional semantic distinction to differentiate them, that of ‘disproximation’.

1.2 Approximation and ‘disproximation’: Contrastive examples and graphical representations

Our intuitions about subtle but noticeable semantic differences among the prefixes are fed by what we can observe in selected pairs of prefixes sharing a base, such as *quasi-philosophical* and *pseudo-philosophical*, or *near-biblical* and *pseudo-biblical*.¹

- (1) a. [The Japanese have] a **quasi-philosophical** devotion to the challenge of building a mechanized human. (COCA, 2006, MAG) (\approx ‘an almost philosophical devotion’)
- b. He opens this satirical thriller set in “our age” with a **pseudo-philosophical** commentary that includes this ludicrous statement: “In his understanding that love was not enough, in his acceptance of the necessity of the sacrifice of his own life to enable the future of those around him, Jesus is history’s first, but not last, example of a suicide bomber.” (COCA, 2007, NEWS) (\approx ‘a commentary which is meant to come across as philosophical but that one shouldn’t confuse with real philosophy’)
- (2) a. Last year the gulf coast got buffeted by a **near-biblical** onslaught of evil weather. (COCA, 2006, MAG) (\approx ‘an onslaught of evil weather that took on proportions close to those of a plague or flood from the Old Testament’)
- b. In “The Gospel According to the Son,” he takes on the story of Jesus’ life and tells it in the first person. The result is a choppy and unexciting telling of a tale we already know well. He uses **pseudo-Biblical** language that makes the story and the character of Jesus seem stilted. (COCA, 1997, NEWS) (\approx ‘language that is meant to sound as though it belongs to (a hitherto lost part of) the Bible, but that in fact is not authentically biblical’)

Such contrasts call for the need of introducing a ‘dynamic’ or ‘orientational’ perspective on their meanings. While *quasi-* and especially *near-* may express genuine approximation in the sense of ‘coming close’ to a standard or baseline level, *pseudo-* conveys the idea of being somehow fake and ‘falling short’ of a standard (cf. also Vassiliadou et al. 2023 and some further supporting observations from the literature that we will come to shortly).

¹ When we compare two differently prefixed adjectives involving the same base, it also becomes clear that the base can be understood in a somewhat different way depending on the prefix and the larger context. For instance, with *near-*, the adjective *biblical* typically means ‘very great, severe’, as in *a storm of near-biblical proportions*; with *pseudo-*, the same base is more likely to relate more closely to the Bible, its writing style, and/or its characters and the events narrated in it, as in *pseudo-biblical verses*, *pseudo-biblical declamations* or *a pseudo-Biblical virgin birth* by Tattoine slave Schmi Skywalker. For another example, *near-historic* usually means ‘almost record-breaking’, while *pseudo-historic* means ‘not really historically accurate’ or ‘seemingly old and authentic, but actually of modern creation’. These facts are interesting and raise the question of whether the meaning of the prefix is responsible for picking out the relevant sense of the base. Of course, some prefixed combinations may be stored with a conventional meaning that no longer has to be ‘computed’ on the fly.

The Langackerian representations in Fig. 1 (adapted from Taylor's 2002: 220 representation of the adjective *tall*) aim to capture this distinction.

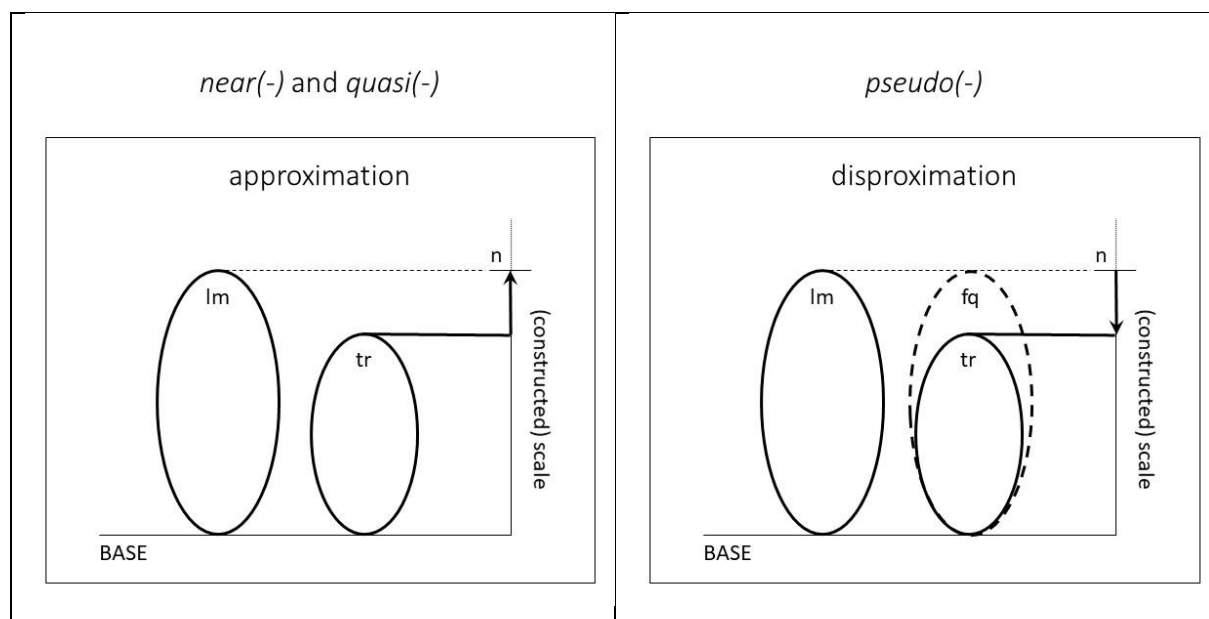


Fig. 1: *Near(-)* and *quasi(-)* profile the (true) approximation of a trajector (tr) to the norm (n) obtained by a landmark (lm), referred to by the morphological base, along some scale. *Pseudo(-)* profiles the ‘disproximation’ of a trajector, apart from its formal quale (fq), away from the norm obtained by a landmark.

In these representations, the ‘BASE’ at the bottom is not to be confused with the morphological base to which the prefix is added. The BASE is the context against which the relevant entity is conceptualized. It is left unspecified in these figures. (In the case of *near-complete*, the BASE could be ‘quantity’, for instance.) The scale along which the trajector moves, towards or away from a norm, is a scale which may yet have to be constructed in an ad hoc way (see Section 4.1). In the representation on the right, only the trajector’s formal quale (fq) (i.e., what it looks like; cf. Pustejovsky 1995) obtains the norm set by the morphological base.

1.3 Previous accounts

For now, the distinction between *near-* and *quasi-* on the one hand and *pseudo-* on the other, shown in Fig. 1, is being presented as a hypothesis merely. There is some support for it, however, from descriptions in the literature. First, the definitions that the Oxford English Dictionary (OED) provides in the entries of these prefixes can be interpreted in light of the different orientations. Thus, for *quasi-*, we find (as part of the definition of its

use with an adjectival base) “almost, nearly, virtually”, which is in line with the (true) approximation interpretation. For *pseudo-*, the OED lists a number of paraphrases that highlight the negative evaluation that comes with its non-scientific use: “Forming nouns and adjectives with the sense ‘false, pretended, counterfeit, spurious, sham; apparently but not really, falsely or erroneously called or represented, falsely, spuriously’.” The OED, surprisingly, does not include an entry for *near-* as a prefix, but in the entry for *near* as an adjective, it lists such compounds, written in two words or with a hyphen, as *near certainty*, *near cider*, *near famine*, *near-fascist*, *near-illiterate*, *near-miracle*, *near monopoly* and some others, where *near(-)* is glossed as “*nearly* the same as, falling *somewhat* short of, being an *acceptable* substitute for (the thing specified)” (italics ours – B.C., R.D. & S.H.).² While the gloss of “falling ... short of” is one that we gave above for *disproximation*, the entire description suggests more of a genuinely approximative semantics, as should be clear from the hedge *somewhat* and the other modifiers we have italicized in the quotation.

Referring also to the OED, Bauer, Lieber and Plag (2013: 414) note that *pseudo-*, except in its scientific use (e.g., *pseudoarthrosis*, *pseudobinary*, *pseudonym*), “indicates something sham or less than genuine”. The “less than” part is again interesting, as it suggests the negative idea of being deficient in some respect (hence, *disproximation*). These authors explicitly compare *quasi-* and *pseudo-* – though, unfortunately, they contrast neither with *near-*³ – and, drawing on examples from COCA (Davies 2008–), they make this observation:

A comparison of *quasi-* and *pseudo-* reveals that the two prefixes share the meaning component that the derivative does not refer to a genuine exemplar of its head’s category. However, *quasi-* lacks the element of falseness that *pseudo-* generally carries. (Bauer, Lieber & Plag 2013: 414)

Dixon (2014: 170–171), too, contrasts *quasi-* and *pseudo-* only, remarking that they “are superficially similar but in fact exhibit a significant meaning difference” (p. 170). Not

² Another sense given by the OED for *near(-)* in compounds is “artificial”, which we presume applies to combinations such as *near fur* or *near-silk*, referring to materials that resemble *sealskin* and *silk*, respectively.

³ This may be due to the fact, noted above, that the OED does not explicitly recognize *near(-)* as a prefix. Bauer, Lieber & Plag (2013), do, however, mention “other potential rivals”, namely the suffixes *-ish*, *-esque* and *-oid*, which like both *quasi-* and *pseudo-* form words that “denote something that is similar, but not identical, in shape or quality to what the base denotes” (p. 416). These suffixes are more like *quasi-* than like *pseudo-*, Bauer, Lieber and Plag (2013) still observe, in that they do not suggest falseness, but these authors provide no further insights on how to distinguish *quasi-* and these three suffixes among themselves, other than suggesting that their distribution is “perhaps a matter of register or domain”. While these suffixes may not have an element of deceit, they certainly can be negatively tinged (cf. Sánchez Fajardo 2022).

having shed the etymological sources of these prefixes, *quasi-X* can be characterized as “having some characteristics of X but not being a full X” and *pseudo-X*, at least in its common, colloquial usage, as “pretending to be like X, or being similar to X, but in neither case being X” (Dixon 2014: 171). These meanings are illustrated, perhaps more humorously than accurately, by means of a couple of well-chosen contrastive pairs. For instance, a *quasi-cripple* is “someone who has some small thing wrong with them (say, missing two fingers from one hand) but not really so serious to justify the label ‘cripple’” (Dixon 2014: 171) – note also the privative aspect in this ‘definition’ – while a *pseudo-cripple* is “someone who has nothing at all wrong with them but pretends to be a cripple (perhaps, so that they can take part in the para-Olympics)” (ibid).

In all these treatments, the element of falseness and counterfeiting only appears with *pseudo-*. It is this semantic component that likely gives rise to the idea that *pseudo-X* is disproximative, in our terms. This can be explained as follows. Given that the formal quale of an entity is what can be observed immediately (being the outer appearance of it), this is the starting point of any assessment of that entity. Once one sees through the pretence, the entity’s real qualities are accessible and these will then be seen as clearly less impressive than what they were first made out to be. With *quasi-X*, we hypothesize, there is no misleading ‘first appearance’. What we see is exactly what we get, but even though the entity does not reach a given norm (namely the norm needed to fully qualify as X), it does come close to it.

1.4 Questions, approach, scope

Even with a more refined semantic terminology, we believe that, to arrive at a suitable semantic characterization of the three prefixes under study (*near-*, *pseudo-* and *quasi-*), we need to let the data speak for themselves in the first place: the meanings of linguistic items should become apparent from their use. Specifically, our paper attempts to answer the following questions: Which semantic similarities and differences do we find among the three prefixes with respect to the bases they select, and does this allow us to come to a semantic characterization of the prefixes themselves? In other words, the main aim of this article is to find out what the meaning is of each of the three prefixes by looking at the types of bases each of them combines with.

The three prefixes of interest here are not meant to constitute an exhaustive set of privative and ap-/disproximative prefixes. Indeed, *half-* and *semi-* could also have been considered, in view of their privative and approximative meaning in, for instance, *half-dead*, *half-naked*, *semidark* and *semiprofessional*, all of which allow paraphrases with ‘not X but almost X’ (cf. Micheli 2023 on *semi-* in Italian). A Latinate alternative to *half-* is *demi-*, as in *demi-permanent*, as said of a non-permanent hair dye, one that, according to the definitions we found, lasts for up to 30 washes, while *semi-permanent* hair dye only lasts for about 5 washings; this suggests that *semi-*, at least in this particular combination, carries a meaning that is far from truly approximative. Another privative prefix is *fake-*, as in *fake-calm*, *fake-cheerful*, *fake-friendly*, *fake-innocent*, etc., but its meaning certainly is not obviously approximative, in that a paraphrase with ‘almost’ is not possible; rather, its meaning could probably be described as ‘disproximative’, in the sense explained above. Thus, if someone is said to act in a *fake-calm* way, the speaker intends to say that their behaviour only *looks* calm but is *different from* being truly calm. The prefix *sub-*, finally, often also has a disproximative meaning, as in *suboptimal* or *subhuman*.

We will now explain how we set out to find out what the three selected prefixes mean, based on the bases they appear with. Our approach is distributional-semantic. That is, when we consider the bases of the prefixes, these are clustered according to their shared contexts of use, not according to their similar morphological properties or language origins. This approach means that some potentially relevant questions are left out of consideration. For instance, both *quasi-* and *pseudo-* are non-native (going back to Latin and to Greek, respectively), in contrast to Germanic *near-*, and, as a reviewer suggested, it would therefore be interesting to find out whether these different origins are reflected by different shares of native and non-native bases and, if so, whether this might also help us in characterizing the differences among these prefixes. We leave this for future research (but see Section 4.4 for some tentative observations) and happily invite other researchers to explore this.

2. Data and methods

2.1 Corpus data and annotation scheme

We retrieved the data from a CQP-transformed version of the commercially available *Corpus of Contemporary American English* (COCA; Davies 2008–; 450 million words, AmE, 1990–2012). Multiple queries were run, in order to include the different bases with which each prefix potentially combines (i.e., adjectives, nouns, verbs, and adverbs) and to account for spelling variation (i.e., one word, hyphenated, or two words). No restrictions on genre or time period were imposed beforehand. After retrieval, the data were cleaned semi-automatically and the prefixed forms were annotated for word class, syntactic distribution (specifically, in case the prefixed word is an adjective, whether it is used attributively or predicatively), and spelling type (hyphenated, single word, two words).⁴ Table 1 illustrates the annotation.

Tab. 1: Annotation used for the tokens extracted from COCA

Token	Word class	Syn. distr.	Explanation
GMACC, which has an operating budget of \$297,000, is a quasi-public agency coordinating Georgia's campaign to save its bases. (COCA, 2003, NEWS)	A	Attr	adjective, attributive
Again, these formulas have the appearance of being scientific because they use estimates of reliability, standard errors, and the like. However, they are pseudoscientific because the numbers do not relate to a valid construct of Learning Disabilities (LD). (COCA, 2006, ACAD)	A	Pred	adjective, predicative
The influence of age on the infants' performance was tested by distributing infants in the three age categories. The 36 infants were pseudo-randomly distributed into three experimental groups according to the type of reinforcement, with an equal number of boys	ADV		adverb

⁴ Although an investigation of spelling was beyond the scope of the present paper, future research should establish whether there are any patterns to be observed in the presence or absence of a hyphen. For instance, does *pseudo* occur as a free morpheme more often when followed by a noun than when followed by an adjective (cp. *a pseudo philosopher* and *pseudo-philosophical*, to use examples found in WordNet)? Also, does *near* connect to the base with a hyphen relatively more often when used in an attributive adjective (e.g., *a near-perfect game*) and appear as a free morpheme relatively more often when the adjective is predicative (e.g., *The game was near perfect*)?

Token	Word class	Syn. distr.	Explanation
and girls and a similar age distribution in each group. (COCA, 2007, ACAD)			
Prosecutors pull detectives off important investigations just to serve subpoenas. These and other problems can be traced to the near collapse of the county sheriff's office and a tug of war between two of the county's most stubborn elected officials. (COCA, 1998, NEWS)	N		noun
[R]eligious divisions that had been similarly subdued beneath an official atheism have been revived and pseudo-ethnicized (thus, for the Serbs the Muslim Slavs are "Turks"). (COCA, 2000, ACAD)	V		verb
Une pareille lecture a vue des connexions imaginaires les plus subtiles, telles qu'elles peuvent se produire par exemple dans la poesie... m'inquiete quelquefois comme si elle relevait d'un domain quasi-religieux d'interdit. (COCA, 1990, ACAD)	FW		foreign word
One night a woman came into the bathroom and caught me hunched over like Quasimodo , staring intently at the drains , my hands full of dead moths. (COCA, 1990, FIC)	FALS E.POS		(other type of) false positive
He then moved to Paris and lived under the pseudonym Sebastian Melmoth. (COCA, 2003, FIC)	CF		combining form
Nor are they all-powerful but rather operate according to their roles in the celestial realm. A sixth-century writer we call Pseudo-Dionysius outlined nine choirs of angels and their job descriptions, which are cross-referenced with biblical examples of each. (COCA, 2009, MAG)	PN		proper noun
[A]nd, as a result of the, I guess it was a near encounter , the horse broke the harness and ran away, and when Black came back to his blacksmith shop, where he had built the car, around the corner [...]. (COCA, 1996, SPOK)	?		ambiguous/unclear (either semantically or morphosyntactically)

Foreign words (e.g., *quasi-religieux*, *pseudo-identitaire*) as well as other false positives (e.g., *Quasimodo*) were discarded. We also excluded proper nouns (e.g., *Pseudo-Dionysius*), clearly technical terms (e.g., *pseudo R²*, *pseudoephedrine*), and combining forms (e.g.,

pseudonym) from the investigation. Even though these still carry traces of the approximative (or disproximative) meaning of the respective prefixation patterns, these items may not reflect the way the prefixes discussed here are used as productive elements in more spontaneous registers. Bauer, Lieber and Plag 2013 (414–415) similarly distinguish the “colloquial usage” and the “scientific usage” of *pseudo-*, remarking that the latter “lacks the evaluative attitude”. That said, it is hard to make a principled distinction between non-technical and technical terms. For one, a single lexical item, used in the same subcorpus, may either exhibit the subjective, evaluative use of pejoration (e.g., 3a) or belong to the purely scientific level, conveying no depreciation at all (e.g., 3b):

- (3) a. Indeed, very few successful socialist propagandists ever bothered to focus on the empirical case for socialism. Rather, when trying to sell socialism as a policy or a movement, its preachers testify about “social justice,” “humane policies,” “fairness,” and “equality.” In short, socialism—be it Marxist, Fabian, nationalistic, progressive—is merely one of many **pseudo-empirical** rationalizations of the deeper psychological impulse of Blair’s “social-ism.” The true case for socialism is not to be found in GDP or employment numbers, but in the promise of leaping out of History into a better society where we are all loved and respected as members of the same family. (COCA, 2010, ACAD)
- b. You, Y., and Rao, J.N.K. (2002). A **pseudo-empirical** best linear unbiased prediction approach to small area estimation using survey weights. *Canadian Journal of Statistics*, 30, 431–439. (COCA, 2019, ACAD)

This implies we cannot simply assume that in academic discourse, *pseudo-*, when combined with a base of Latinate or Greek origin, will be technical. For another, it is also too simplistic that even in non-technical discourse, *pseudo-* always comes with a pejorative interpretation. Consider this example:

- (4) Last year’s Gear S2 had a sleek, **pseudo-futuristic** vibe – so much so that the white model I reviewed looked like a prop straight out of THX 1138. Samsung ditched that clean aesthetic this time around – the S3 Frontier rocks a rugged look, with a knurled, rotating bezel and a chunky stainless-steel body. (COCA, 2016, MAG)

The uses of *pseudo-* thus seem to form a cline from colloquial and negatively-evaluative (e.g., ***Pseudo-artsy*** film featuring dribble called from a dark chat room), to neither very colloquial nor scientific, and apparently (quite) neutral (e.g., *They went past a red, pseudo-Gothic church, past a small bridge and railway tracks*), to scientific and non-evaluative (e.g., *The test signal is generated from a digital pseudo-random noise (PN) generator*)

(examples again taken from COCA). In view of these observations, we may decide to leave the latter in after all in subsequent analyses.

Finally, we discarded ambiguous or unclear cases. For instance, for *near encounter*, we could not unambiguously establish whether *near* expresses spatial proximity ('close'; 'close-by'), as in *near miss* (more examples will be given shortly), or approximation ('almost'), as in *near collision*; in some other cases (e.g., *pseudo-conservative*), it was not clear from the context of the prefixed word whether the base was a noun or an adjective.

The extracted examples with *near*(-) were especially prone to noise. The number of false positives reached about 5,890 cases out of the 11,614 examples retrieved; that is, just over half of the cases were false positives. The majority of those (about 4,500 tokens) involved *near*(-) meaning 'proximal', 'in proximity to', 'in the vicinity of' or 'close(st) to (a reference point)'. In these cases, *near*(-) is the opposite of 'far (from)' and does not carry the meaning of 'almost' or '(metaphorically) approaching'. Examples are *near*(-) in *the near future*, *the near side of moon*, *Near Eastern*, *near-surface currents*, or *near-sighted*. Also excluded were examples in which *near* occurs as a literally used preposition (e.g., *near home*, *near schools*, *near Silicon Valley's tech companies*) or a metaphorically used one (e.g., *(to be) near bankruptcy*, *(to be) near retirement*, *(to be) near tears*). A third category of excluded examples involved those with *near* meaning 'close', 'with hardly any margin or excess quantity (e.g., of time, of space)', 'with little difference (between competing parties, etc.)', rather than 'almost' (e.g., *a near escape*, *a near tie*, *a near-run thing*, and *a near miss*, which does not mean 'almost a miss', but 'a collision or a shot which comes close to hitting (target)', 'a failure, but not by much').

Something that presented quite an annotation challenge was when the base was not clearly a noun, an adjective, or another part of speech. For instance, the underlined base in *near record snowfall* and *near-textbook recipe for disaster* is a noun that appears to be used as an adjective; in that case, 'A or N' was given as annotation code (rather than '?'). Likewise, in partly adjectival and partly verbal cases such as *near-blinding*, *near-scalding* and *near-endangered*, we used the code 'A or V'. Cases that could be considered partly nominal and partly verbal, such as *near-doubling*, *near-tripling*, *near-drowning* and *near vanishing*, were given the code 'N or V (gerund)'. Finally, still for *near*(-) at least, we used a special annotation code when the prefix was used with an adjective or noun that formed

part of a nominal compound, as in *near civil war* and *near-capital offense* (annotation code: ‘A of AN compound’) and in *near plane crash* and *near-death experience* (‘N of NN compound’). We will return to such compounds in Section 4.2. Table 2 provides an overview of the raw frequencies for each prefixation pattern with their different bases.

Tab. 2: Frequency distribution of *pseudo*-, *quasi*-, and *near*- with different bases and spelling variants; COCA

Morphological base	Variant	Prefix			Total
		<i>pseudo</i> (-)	<i>quasi</i> (-)	<i>near</i> (-)	
adjectival	x A	12	40	397	
	xA	179	117	54	
	x-A	311	1,224	1,984	
	Total	502	1,381	2,435	4,318
nominal	x N	115	68	1,201	
	xN	448	106	32	
	x-N	601	452	1,022	
	Total	1,164	626	2,255	4,045
adverbial	x ADV	0	0	1	
	xADV	3	5	0	
	x-ADV	3	19	0	
	Total	6	24	1	31
verbal	x V	0	0	0	
	xV	0	0	0	
	x-V	1	1	5	
	Total	1	1	5	7
residue		1,411	201	6,918	8,530
TOTAL		3,084	2,233	11,614	16,931

The category ‘residue’ contains compounds, foreign words, combining forms, false positives, and ambiguous cases. Fig. 2 presents the results presented in Table 1 more clearly.

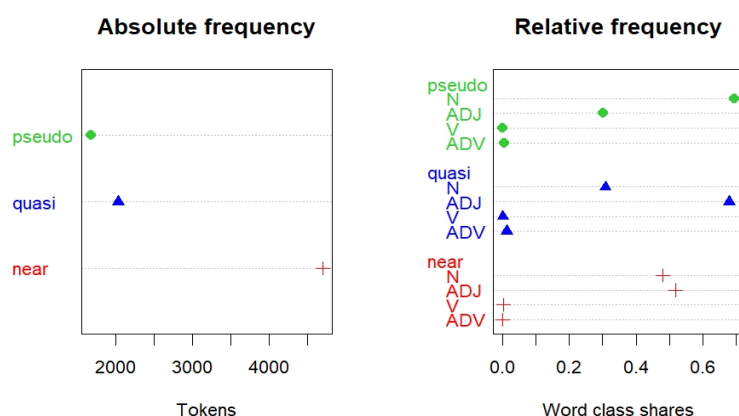


Fig. 2: Absolute frequency of words prefixed by *pseudo*-, *quasi*- and *near*- after clean-up (left) and relative frequency of prefixed words by the syntactic category of their base (right)

Note that *near-* is by far the most frequently used prefix of this triplet. It can also be observed that about 70% of words with *pseudo-* are nouns and only about 30% of such words have an adjectival base, while the opposite pattern holds for words with *quasi-*. So, although both *pseudo-* and *quasi-* are learned prefixes (having a Greek and Latin origin, respectively) and have somewhat similar meanings – indeed, they are sometimes seen as synonyms – their morphological behaviour is rather different. With *near-*, the distribution of nominal and adjectival bases is roughly fifty-fifty. All three prefixes hardly combine with verbs or adverbs. The subsequent analyses are therefore limited to nominal and adjectival bases.

2.2 Semantic vector spaces

For investigating the semantic characteristics of the patterns under investigation in more detail, we use distributional semantics, an explorative method that has become ever more popular in recent years (see, e.g., Levshina & Heylen 2014; Perek 2016, 2018; Hilpert & Perek 2016). Distributional semantics draws on the idea that words that are similar in meaning will occur in similar contexts – a hypothesis that has been confirmed in a number of distributional-semantic studies. Thus, similarities and dissimilarities between linguistic items can be characterized with the help of their collocates. In a ‘bag-of-words’ approach, the collocates of each word are used as so-called semantic vectors, and the similarities between them are quantified using an association measure such as Mutual Information and a measure of similarity such as Cosine similarity. In our approach, we follow Levshina’s (2015) operationalization of the method, using Positive Pointwise Mutual Information (PPMI) as association measure and Cosine similarity as measure of similarity.

As we are interested in the semantics of the head constituents, we queried COCA for the adjectives and nouns that are attested in combination with *near-*, *quasi-* and *pseudo-*, and the concordances obtained in this way were used to extract the collocates of each lexeme in a window of five words to the left and to the right.⁵ So-called stop words, i.e., words that are not very informative for our purposes due to their very high frequency, were excluded from the collocates using the R package *stopwords* by Benoit et al. (2021). We use multi-dimensional scaling (MDS; see e.g., Wheeler 2005) in order to be able to represent

⁵ In a similar vein, for Dutch *fake*-type morphemes, Van Goethem and Norde (2020) carried out a semantic vector-space analysis on the element to the immediate right of these prefixes.

the results in two-dimensional space. To keep the plots readable, only items attested at least 5 times in the entire dataset are taken into account.

3. Results

3.1 Number of shared bases

Table 3 below shows for each pair of prefixes the number of morphological bases shared.

Tab. 3: Number of bases shared by pairs of prefixes, per word class of the base

pair	adjectival base	nominal base
<i>near-</i> and <i>quasi-</i>	80	36
<i>near-</i> and <i>pseudo-</i>	35	28
<i>pseudo-</i> and <i>quasi-</i>	84	47

As can be seen by comparing the first and second lines of Table 3, *near-* shares more bases (both adjectival and nominal ones) with *quasi-* than it does with *pseudo-*. This seems to confirm that *near-* and *quasi-* are more closely related to each other than *near-* and *pseudo-*. But then again, *quasi-* and *pseudo-* turn out to share even more bases among themselves, calling into question the assumption that *near-* and *quasi-* pattern alike and are both different from *pseudo-*. We suggest that the number of shared bases, while to some extent indicative of the semantic relatedness of the prefixes, can only tell part of the story. A more in-depth exploration of the sorts of bases the prefixes attach to is called for.

3.2 Semantic vector-space results

Figures 2a and 2b show the results of a semantic vector-space analysis for the lemmas occurring in the three constructions under investigation (*near-X*, *pseudo-X*, *quasi-X*). Figure 2a shows the results for adjectives, Figure 2b for nouns.⁶ The results allow for (tentatively) identifying some semantic clusters of nouns and adjectives that combine with the three affixes. They also suggest that while there is much overlap between the semantic domains, there are a few niches that are almost exclusively occupied by *quasi-* (in blue) and especially *near-* (in red).

⁶ An interactive version of these plots can be found at <https://hartmast.shinyapps.io/ApproximativeVectorSpaces> (accessed 1 July 2022). Note that some adjectives also occur in the nominalized form (e.g., *the pseudoscientific* as a person collective), hence some lexemes occur in both plots.

On the left-hand side of Figure 2a, we see many lexemes that have to do with institutions (governmental), society (*democratic*), as well as ideologies and/or schools of thought (*socialist*, *marxist*). On the right-hand side, we find more concrete state adjectives (*black*, *white*, *dead*). The middle ground and especially lower half of Figure 2a are occupied by a fairly heterogeneous set of adjectives, many of which are scientific terms (*experimental*, *isotropic*, *academic*), while others are more to do with the ‘esoteric’ (*mythic*, *magical*). Especially the lexemes in the middle area of the plot often carry a certain positive or negative semantic prosody (*stellar*, *hysterical*).

The nouns that combine with *pseudo-* and *quasi-* (Figure 2b) show an even clearer connection to the academic domain, and to a certain extent, this also goes for *near-*. This might indicate that the three word-formation patterns are characteristic of specific (academic) text types or at least specific ‘learned’ lexical items. Apart from this, we find similar semantic groups in Figure 2b as in Figure 2a, e.g., social/institutional terms or terms referring to ideologies (*government*, *democracy*, *capitalism*) but also substance (*beer*, *liquid*) and state nouns (*death*).

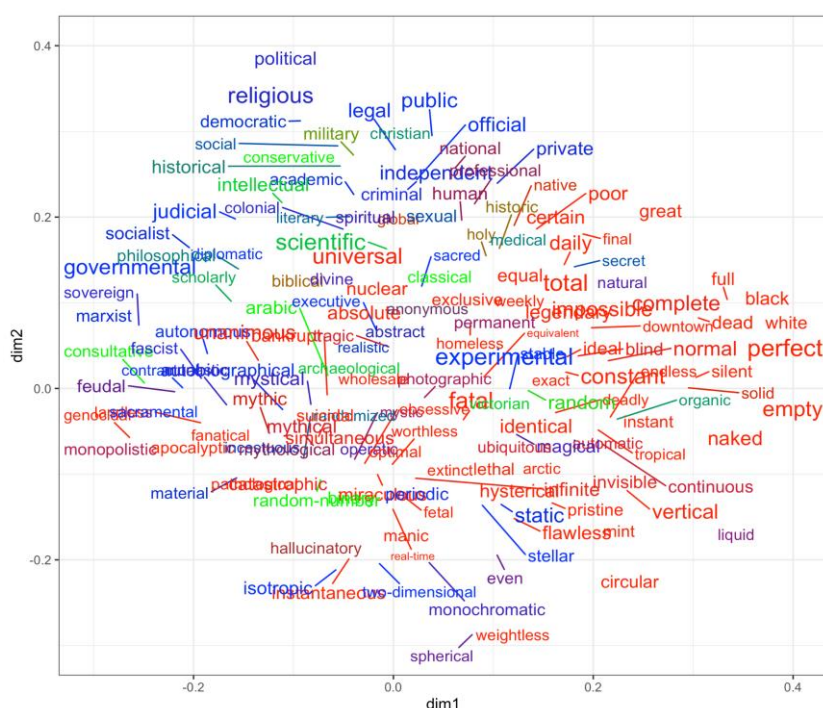


Fig. 2a: Results of a semantic vector-space analysis for the adjectives attested in combination with *near-*, *pseudo-*, and *quasi-*. The colours indicate the prefixes each item preferentially occurs with: red stands for *near-*, green for *pseudo-*, blue for *quasi-*, with different shades in-between representing ‘promiscuous’ items that occur in more than one of the three constructions.

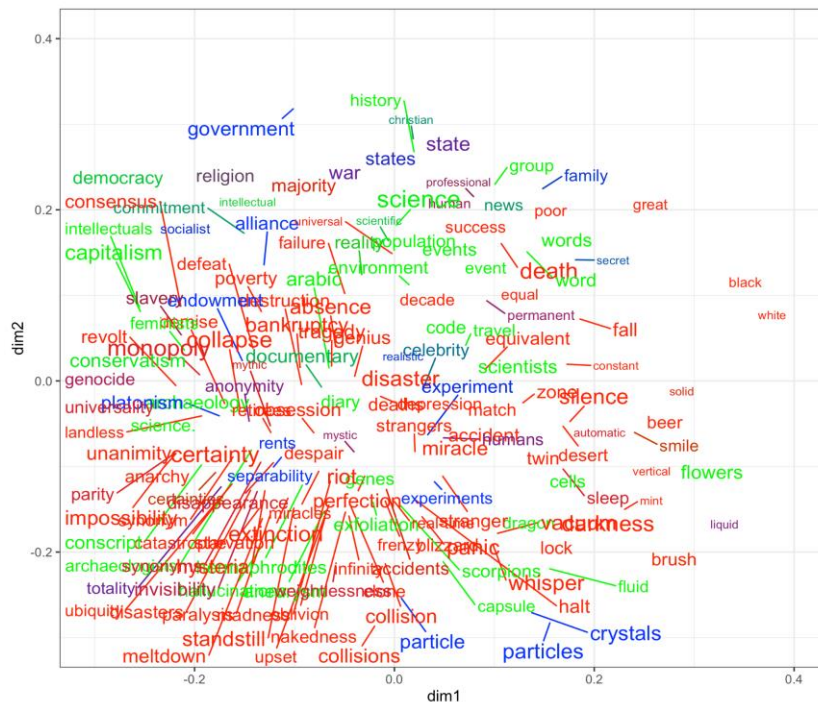


Fig. 2b: Results of a semantic vector-space analysis for the nouns attested in combination with *near-*, *pseudo-*, and *quasi-*. They are represented in the same way as in Figure 2a.

4. Discussion

Apart from what we can gain from the number of shared bases and the semantic vector-space analyses, the stage of preparing the data for analysis (see again Section 2.1) already allowed us to make some mostly qualitative observations. Some of these assorted findings are discussed in Sections 4.1 to 4.3. We will then return to the findings about shared bases in Section 4.4 and to the semantic vector-space analyses in Sections 4.5 and 4.6. A close reading of some selected examples with *religious* as a base, shared by the three prefixes, will be provided in Section 4.7.

4.1 Constructionally induced scalarity

With *near(-)*, a scalar interpretation may be constructionally induced, even when scalarity is not clearly part of the meaning of the noun:

- (5) a. he is a near skeleton
- b. the beans had dissolved into a near puree
- c. my breathing had quickened to a near pant

What we find here is a sort of coerced reading. *Near*-X is so frequently used with a scalar interpretation, especially but not exclusively with adjectival bases (e.g., *near-complete*, *near-blind*, *near-perfection*), that nouns whose meaning is not standardly seen as forming a point high up on a cline (*skeleton*, *puree*, *pant* in the examples above) can nonetheless easily be perceived as doing so (*skeleton* indicates a high point on a scale of thinness, *puree* on a scale of mushiness, *pant* on a scale of frequency of in- and exhaling).

4.2 Compounds: Scope relations and infelicitous hyphenation

Near(-) often occurs in compounds, with different scope possibilities. Compare (6) and (7), where the added brackets indicate what belongs together:

- (6) a near [ghost town], a near [heart attack], near [dirt roads], a near [car accident]
- (7) a [near-death] experience, a [[near zero]-emission] plant

The bracketing structure of these examples is not always clear, though: should it be *near*-[starvation wages] or [near-starvation] wages? In some cases, hyphenation may provide a pointer as to how the pattern should be understood, but the following examples show that hyphenation is not always ‘logical’ (square brackets again added):

- (8) near-[photo finish], near-[rubber stamp approval], near-[light speed], near-[folk hero], near-[world record]

What makes hyphenation clumsy in these cases is that *near* is typographically represented as forming a unit with the next element only (e.g., *near-rubber*) while it forms a unit with the whole compound (e.g., ‘what almost amounts to rubber stamp approval’). This suggests that there are more factors influencing the use of hyphens, as opposed to whitespace or univerbation (see Sanchez-Stockhammer 2018), which is why hyphenation alone cannot be used for clearly disambiguating between scope alternatives in such cases.

4.3 Tiny niches of productivity: An example

While annotating the data, it became clear that prefixes can be used productively with similar bases in extremely low-level patterns. One example is *near*(-) in combination with nouns referring to a manner of speaking. Thus, apart from *near whisper*, which appears with sufficient frequency to be visible in the plot, we also found items which themselves have too low frequency for this – usually, they are hapaxes – but which together do form a

discernable pattern: *near growl*, *near-holler*, *near monotone*, *near murmur*, *near pant*, *near shout*, *near-sneer*, *near snort*, *near-wail*. In an example such as “*Do not argue with me*,” *she said in a near monotone*, we arguably see the following conventionalized pattern at work:

- (9) “[Quotation]” X said in/with a near N_{manner of speaking}.

4.4 Shared bases in numbers

We noted in Section 3.1 that *near-* and *quasi-* share a larger number of bases among themselves than the former does with *pseudo-*. This finding seems to confirm our hypothesis that *near-* and *quasi-* share a semantic feature, presumably then that of approximation, while *near-* and *pseudo-* are semantically different, which could then be taken to be due to *pseudo-* expressing disproximation. Our hypothesis, however, only finds partial support from the data, because *quasi-* and *pseudo-* share even more bases than *near-* and *quasi-* do. At this stage, we cannot fully account for these results. Here are nonetheless some tentative considerations.

First, *near-* is of Germanic origin while both *quasi-* and *pseudo-*, as noted before, are learned prefixes. This could in part explain why *quasi-* and *pseudo-* share so many bases: these are typically Latinate or Greek-derived items one could expect to find in more formal varieties of English: *democratic*, *futuristic*, *intellectual*, *rational*, *theological*, etc. Bauer, Lieber and Plag (2013: 416) note that both *quasi-* and *pseudo-* are “eligible for the coinage of a new scientific term, and we do find both, perhaps with a preference for *pseudo-*.” Compared to these two prefixes, *near-* more often appears with bases of Germanic origin, such as *dead*, *naked*, *flawless*, and so on. That *near-* and *quasi-* nonetheless appear to share many bases (e.g., *annual*, *free*, *magical*, *nude*, etc.) then possibly does speak to their similarity.

Second, if a pair of prefixes share a large number of bases, this need not be taken to mean that these prefixes are *identical* in meaning. This adds a caveat to the preceding point about the relatedness of *near-* and *quasi-*. Likewise, even if *quasi-* and *pseudo-* have many bases in common, this in itself does not suggest that they are close synonyms. After all, they could in principle express related but rather different (indeed opposite) meanings with respect to that base, as is the case for pairs like *sub-* and *supra-* (cf. e.g., Gries & Otani 2010 on the behavioural profiles of antonyms). We do not have sufficient evidence to claim, however, that this is actually also the case for *quasi-* and *pseudo-* (but see Section 4.7 for at

least one convincing illustrative case), although it is certainly something that needs to be considered as a possibility.

Third, in this respect, if *near-* and *pseudo-* were each other's antonyms (expressing approximation vs. disproximation), then we would expect them to share many bases. That this is not the case may not only be due to the fact that these prefixes have their origin in different language families (cf. our first point noted above) but could also be explained by the fact that *near-* and *pseudo-* are not perfectly opposite in meaning. In ordinary (non-technical) uses of *pseudo-*, there is an evaluative semantic component relating to fakeness, dishonesty, pretence, etc., for which there is no clear positive counterpart in the use of *near-* (cf. again Section 1). Thus, we can describe something as *pseudo-scientific* (i.e., 'only pretending to be scientific') while it is not clear what it would mean for something to be *near-scientific*. It is possible, however, to claim something with *near-scientific certainty* or to carry out an action with *near-scientific precision*, but then the whole adjective-noun combination (*scientific certainty*, *scientific precision*) is felt to be modified semantically by *near-* (cf. also Section 4.2 for spelling-scope mismatches).

4.5 Kinds of bases: Further observations from the vector-space analyses

The semantic vector-space analyses hint at a few distinct clusters in which each of the prefixes is used. Selecting adjectival bases and spoken register, for instance, we can see that *near-* selects bases with negative prosody (e.g., *near-deadly*, *near-fatal*, *near-suicidal*, *near-apocalyptic*), although we also find it with bases that are neutral or positive (e.g., *near-invisible*, *near-universal*, *near-perfect*). This prefix is clearly the most productive of the three so far investigated. Using the same settings, *pseudo-* only appears with sufficient frequency and without much competition from other prefixes in the well-known combinations *pseudo-intellectual* and *pseudo-scientific*, though it also shares bases like *religious* and *medical* with *quasi-*. Still with the same settings, *quasi-* occurs with a larger range of bases than *pseudo-* to form such adjectives as *quasi-diplomatic*, *quasi-governmental*, *quasi-judicial*, *quasi-public*, *quasi-private*, all of which have a precise, legal-administrative definition. These are, in a sense, approximative but not evaluative. Yet, we also find combinations such as *quasi-religious*, whose base is shared with both *pseudo-* and *near-*, and *quasi-*

unanimous, quasi-universal, quasi-divine, quasi-mystic, quasi-complete and *quasi-normal*, all of which also appear in the *near-* variant, and more frequently so.

4.6 Approximation and disproximation: Visible in the data?

The semantic vector-space analyses, as well as an explorative look at the distribution of the bases between the different prefixes, provide *some* support for the hypothesis that *near-* and *quasi-* are more similar to each other than either of these is to *pseudo-*, in terms of the ‘dynamic’ or ‘orientational’ interpretation. We find that *near-* shares many more of its bases with *quasi-* than it does with *pseudo-*, which is in line with our intuition that *quasi-* and *near-* are semantically similar, while the meaning of *pseudo-* is apparently different. However, this in itself does not confirm beyond reasonable doubt that the former two express approximation and the latter disproximation. If *pseudo-* is disproximative in meaning, involving a sense of ‘pretending to be without actually being’ (cf. Section 1), we can predict that this prefix does not occur with bases that have negative prosody. This appears to be the case: we do not encounter combinations such as *?pseudo-fatal* or *?pseudo-catastrophe* in our dataset.

Puzzlingly, however, we also do not find combinations such as *?pseudo-perfect* (unless in a technical sense: *pseudoperfect numbers*) and we do not find many negative-prosody bases with *quasi-* either (*?quasi-fatal, ?quasi-catastrophe*).⁷ The latter observation suggests that in English, *near-* is the default prefix for approximative meaning and that the use of *quasi-* is, by comparison, quite restricted, unlike for instance *quasi-* in French, which even has an approximative adverb variant (*quasiment* ‘almost’).

⁷ In larger corpora, such as enTenTen20 (over 36 billion words in size), available via SketchEngine, some of the combinations to which we assign a question mark may be found, as noted by a reviewer, who cited the ones below:

- (i) ... the **pseudo-perfect** setting from his childhood dreams. (adult-fanfiction.org)
- (ii) ... missing the crown of thorns around his heart and the **quasi-fatal** wound ... (egodeath.com)

Though rare, these examples are in line with our intuitions. *Pseudo-perfect* hints at a deceptive and/or unrealistic perception of perfection. *Quasi-fatal* means ‘as good as fatal’, ‘practically fatal’. On enTenTen20, still no example was found of *pseudo-fatal*. This word is not necessarily unacceptable but can only be used in special situations, where it makes sense for something to look fatal without actually being so, as in this rare web-attested example referring to the well-known Milgram experiments in psychology:

- (iii) With the confidence and supervision of these “Scientists/Doctors” these people were administering **pseudo-fatal** doses of [electricity] just because someone in a lab coat said it was the right thing to do. (<https://www.physicianassistantforum.com/topic/11888-what-to-do-if-md-is-wrong>, accessed 31 January 2023)

4.7 *Near-/quasi-/pseudo-religious*: Close reading

We end our paper with a close reading of, to our mind, representative examples of the three prefixes attached to the same base, allowing us to elucidate the differences between each prefix:

- (10) a. As the argument progresses, his rhetoric rises to a **near-religious** fervor that is hardly orthodox for literary criticism. (COCA, 2010, NEWS)
- b. [...] the self-identified “third-wave Confucians” have betrayed Kongzi’s Way in their eagerness to embrace first Buddhist and later Western tenets, while elevating Western science and a range of postmodern theories to **quasi-religious** status. (COCA, 2016, ACAD)
- c. You take a vulnerable kid, an addict, drop him in a mess of death and doubt, it won’t be long before he starts looking for something to cling to. In comes Mama Celia with her authentic Mexican cuisine, side of **quasi-religious** voodoo bullshit and voila. You bet your ass she’s got her hooks in him. (COCA, 2016, TV)
- d. [...] Mitchell, who sang through his court proceedings and spouted **pseudo-religious** gibberish, was a skilled con man who was largely faking his delusions. (COCA, 2011, NEWS)

In (10a), where *religious* combines with *near-*, the context item *rises to* is in line with the notion of approximation. Of the 27 tokens in COCA containing *near-religious*, 6 are followed by the (otherwise low-frequency) noun *fervor*, which is also high on a scale of emotions. Some of the other nouns following *near-religious* are *experience* (6 tokens), *devotion* (2 tokens), and *ecstasy* (2 tokens). The author of (10a) seems to characterize someone’s rhetoric as something that *comes close* to religious fervor. In both (10b) and (10c), we find the adjective *quasi-religious*. In (10b), its use is clearly approximative – note the use of the verb *elevate*, again suggesting movement to a particular standard. In (10c), *quasi-religious* is used in a rather different way, but this use is perhaps not necessarily *disproximative*. Its meaning could be, as in (10a), ‘a sort of’, ‘a kind of’ and *quasi-* in this example thus comes close to functioning as a hedge. *Bullshit* here means something like ‘stupid talk that I do not like’ – the speaker seems to struggle to find the appropriate term. In other words, the meaning of *quasi-religious voodoo bullshit* could be ‘stupid voodoo talk that is almost/kind of religious in nature’. Note that the context contains *authentic* (albeit applied to another noun), so the meaning here is not necessarily ‘voodoo bullshit that falls short of being religious’. That said, *quasi-* actually *can* have a *disproximative* interpretation, as in (11):

- (11) Available wherever dubious, **quasi-scientific** self-help books are sold. (COCA, 2009, TV)

Here, the adjective *dubious* makes it clear that the language user does not find that self-help books are of an almost scientific quality; rather, the interpretation is that they fail to meet the standard of proper scientific rigour. Finally, in (10d) above, the claim that *pseudo-* has a clearly disproximative interpretation is supported by context items such as *spouted*, *gibberish*, *con man*, and *faking*. A close paraphrase of *pseudo-religious gibberish* is not ‘gibberish that is almost/kind of religious in nature’; instead, the meaning in context here is more likely ‘fake-religious statements which make no sense, and which we can therefore call gibberish’. Other nouns that may be found to follow *pseudo*-ADJ (e.g., apart from *gibberish*, we find again *bullshit*, but also *claptrap*, *drivel*, *garbage*, *gobbledygook*, *jargon*, *nonsense* and *pap*, none of which occur in COCA after *quasi*-ADJ) are revealing in that they provide strong cues for the negative connotation typically associated with *pseudo-*.

5. Conclusion

We have come some way toward differentiating the use of the English privative prefixes *near-*, *pseudo-* and *quasi-*. All three prefixes occur with adjectival and nominal bases. By looking at the bases, we have seen that *near-* and *quasi-* share more bases with each other than the former does with *pseudo-*, lending partial support to the assumption that the *near-* and *quasi-* are semantically similar to each other and that *pseudo-* is different. We have also seen, however, that *quasi-* and *pseudo-* share many bases (even more so than *near-* and *quasi-* do among themselves), although this could be an effect, in part, of both these affixes’ non-Germanic origin. We have also found that *near-* is a default, highly productive prefix. *Pseudo-*, at least in nontechnical discourse, is least productive. *Quasi-* displays a little more productivity than *pseudo-*, appearing for instance in combinations to do with political/ideological leanings.

Work that lies ahead will have to be of a both quantitative and qualitative nature. For instance, we should conduct a semantic vector-space analysis not just on the bases but also on the prefixed words as a whole, so as to get more insight into the ways in which these words are used. In an attempt at proving that *pseudo-* is disproximative (unlike *quasi-*, or at least *more* so than *quasi-* and definitely unlike *near-*), we could then zoom in on the kinds of nouns that we find after an adjective prefixed in a particular way. Such detailed

analyses might then include the observation, for example, that *pseudo*-ADJ may be followed by nouns such as *drivel* or *nonsense*, as we anecdotally observed here, and possibly by other context items that are suggestive of a depreciative semantics.

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